

REMARKS**INTRODUCTION**

In accordance with the following, reconsideration of the allowability of pending claims is respectfully requested.

Claims 1, 6-9, 11, 12, 17-20, 22-25, and 28-37 are pending and under consideration.

REJECTION UNDER 35 USC §103

Claims 1, 6-9, 11, 12, 17-20, and 22-25 stand rejected under 35 USC §103(a) as being unpatentable over Park, U.S. Publication No. 2001/0043522, in view of Oohchida et al., U.S. Patent No. 6,584,060; claims 28-34 stand rejected under 35 USC §103(a) as being unpatentable over Park in view of Oohchida et al., and further in view of Kim, U.S. Patent No. 6,337,841; claim 35 stands rejected under 35 USC §103(a) as being unpatentable over Park in view of Oohchida et al., and Kim, and further in view of Ohnishi et al. U.S. Patent No. 6,507,009; claim 36 stands rejected under 35 USC §103(a) as being unpatentable over Park in view of Oohchida et al., and Kim, and further in view of Fujita, U.S. Patent No. 5,097,462; claim 37 stands rejected under 35 USC §103(a) as being unpatentable over Park in view of Oohchida et al., and Kim, and further in view of Tajiri, U.S. Patent No. 6,072,607. These rejections are respectfully traversed.

The Office Action has indicted that the claimed hologram optical element, e.g., of claim 1, is met by the diffraction grating 12 of Park, stating on page 2 that the diffraction grating 12 of Park adjusts "the convergence and /or divergence of the light emitted from the light source during assembly."

However, it is respectfully submitted that the Office Action has misinterpreted the diffraction grating 12 and the operation of the same within the system of Park.

First, in response to applicants previous remarks, the Office Action states on page 8 that "[b]y definition, focusing means to cause to converge on or toward a central point; concentrate or to direct towards a particular point or purposed (American Heritage Dictionary). The element of Park acts to make the light beam incident on a proper location of the photo-detecting element 18. The elements achieves this by adjusting the divergence of the split beams ...by moving in an optical axis direction such that the beams are converged at the appropriate location on the photo-detecting elements. Put differently, the location of the beams on the photo-detector is a function of the adjusted position of the optical element in the optical axis direction..."

It is respectfully submitted that this interpretation of Park is incorrect, as the Office Action relied upon diffraction grating 12 for different light sources is not for changing or adjusting a divergence or convergence of incident light, but rather results in a shifting of the incident beam, e.g., due to the different wavelengths of incident light.

The diffraction grating 12 would not be designed for changing or adjusting the divergence or convergence of incident light as this is not needed or desired in the system of Park.

As explained in paragraphs [0028]-[0030] of Park, there is a particular path followed by the light generated by the light source.

After the diffraction grating 12 is the beam splitter 13 that "reflects or transmits an incident laser beam according to the polarization of the three rays."

Light incident on the beam splitter 13 from the diffraction grating 12 has a first S or P polarization, and is accordingly reflected toward the optical disc. Conversely, light incident on the beam splitter 13 after reflecting of the optical disc would have a different perceived polarization and would thus be transmitted through the beam splitter 13 toward the light detector 18.

Light from the diffraction grating 12 that is reflected by the beam splitter 13 is then collimated by the collimating lens 14.

Similarly, light reflected off the optical disc is collimated by the collimating lens 14 before being transmitted by the beam splitter 13 toward the light detector 18.

Thus, only after two collimating operations is the light originally generated by the light source incident on the light detector 18. In addition, the collimated light from the collimating lens 14 is twice collimated, with the first collimated light being focused on the optical disc and the second collimated light being focused on the light detector 18.

Accordingly, as the light output by the diffraction grating 12 is thereafter collimated twice there is no need to change or adjust the divergence or convergence of light by the diffraction grating 12. Rather, only the present application provides the mechanism and desire for such a adjustment of the divergence or convergence before the collimating lens.

As noted above, the Office Action indicated that the diffraction grating 12 of Park adjusted the divergence or convergence of light since Park moves the diffraction grating 12 in and out to change the position of the light spots on the light detector 18.

However, again, the diffraction grating 12 would only appear to result in a shifting of the incident light, e.g., within the plane of the diffraction grating 12. Thus, the Office Action interpretation of the potential operation of the diffraction grating 12 would appear incorrect.

In addition, this interpretation of Park is incorrect since the resultant implementation would not appear to work.

Park discusses that the diffraction grating 12 can be moved inward or outward to correct for the location of beam spots (e.g., of the three light beams) on the light detector 18.

However, any changing or adjusting of the divergence or convergence by the diffraction grating 12 would also appear to require the collimating lens 14 to also have to be changed for each movement of the diffraction grating 12 since the collimating lens may have a fixed focal length. Here, further, only the diffraction grating 12 would appear to have been described in Park as being movable; the location of the collimating lens 14 would appear to fixed.

Accordingly, in view of the above, it is respectfully submitted that the diffraction grating 12 of Park cannot be interpreted as suggested in the Office Action. It is respectfully submitted that the remaining relied upon references similarly fail to disclose such a deficient feature.

As all independent claims include at least the claimed adjusting of the divergence or convergence, it is respectfully submitted that the relied upon references fail to disclose all the claimed features of the independent claims. In addition, for at least their dependence on the allowable independent claims and their respective features, it is respectfully submitted that the dependent claims are also allowable.

Withdrawal of this rejection and allowance of all pending claims is respectfully requested.

CONCLUSION

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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